

REMARKS

The Examiner is thanked for the thorough examination of the present application. The Office Action, however, tentatively rejected claims 39-52 and withdrew claims 18-38 from consideration. In response, claims 39 and 49 have been amended and claim 53 has been added.

Specifically, Applicant has amended claim 39 to more clearly identify a novel and non-obvious feature of the claimed invention. Specifically, amended claim 39 recites the limitations of “the electret having a first polymer copolymerizing from monomers having polyvinylidene fluoride (VdF) as a first monomer, and hexafluoropropylene (HFP), chlorotrifluoro ethylene (CTFE), tetrafluoro ethylene (TFE), or combinations thereof as a second monomer”. Full names of VdF, HFP, CTFE, and TFE are respectively polyvinylidene fluoride, hexafluoropropylene, chlorotrifluoro ethylene, and tetrafluoro ethylene, which are well known by those skilled in the art, as reflected by the disclosure of Yamamoto et al. in US 4,560,737 (cited by the Examiner). Applicant submits that no new matter has been added to the application by this amendment.

As amended, claim 39 further recites the limitation “an electret coated on the substrate along the porous profile thereof”. Support for this limitation can be found at least on page 9, lines 9-16 of the original specification of the application. Thus, independent claim 39 expressly recites that an electret is coated on the substrate along the porous profile thereof. Accordingly, the amendment adds no new matter to the application.

Applicant has amended claim 49 to depend from claim 48. Applicant has also added new claim 53 (as supported by Figs. 3A, 3B, and the related description) to more clearly identify a novel and non-obvious feature of the claimed embodiments. Specifically, claim 53 recites: “The composite

as claimed in claim 39, wherein the electret is coated on the *inner walls of the pores* of the porous substrate.”

Added Description

Applicant has amended the specification to add new FIGs. 3A and 3B, and the following description thereof:

Referring to Figs. 3A and 3B, for example, a part of substrate 100, which is the porous fabric, is shown. The substrate 100 comprises an *outer pore 110* exposed in a surface thereof and an *inner pore 120* inside the body thereof. The outer pore 110 and inner pore 120 respectively have *inner walls 115 and 125*. As described, when the substrate 100 was immersed in the electret solution, followed by hung to remove extra solution and dried, dried *copolymer 130* was formed along the profile of the substrate 100, and more specifically, *coated on the inner walls 115 and 125*.

Applicant submits that this addition adds no new matter to the application for at least the following reasons.

Referring to the description in page 9, lines 9-16 of the original specification of the application, it is well known by those skilled in the art that a porous fabric has the profile, pores, and inner walls of the pores as those of the substrate 100 shown in Figs. 3A and 3B. Further, persons skilled in the art will recognize, based on the remaining disclosure of this application, that an electret solution can be driven into the pores of the porous fabric when the porous fabric is immersed in the solution as described. In addition, those skilled in the art will appreciate, from the remaining disclosure of this application, that the electret copolymer in the solution remains and coats on the inner walls of the pores of the porous fabric, as shown in the added Fig. 3B, when finishing the hanging and drying step as described, evaporating the solvent of the electret solution.

Therefore, new claim 53, the related Figs. 3A, 3B, and the related description added to the specification, are inherently contained in the teachings in page 9, lines 9-16 of the original

specification of the application. Accordingly, the amendments made herein add no new matter to the application.

Rejections Under 35 U.S.C. 112

Claims 38-52 stand rejected under 35 U.S.C 112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter, which Applicant regards as the invention, due to the inclusion of acronyms for species VdF, HFP, CTFE, and TFE (without defining the full names of the species). Applicant respectfully requests reconsideration of this rejection, in view of the corrective amendments made to claim 38.

As amended, claim 38 recites “the electret having a first polymer copolymerizing from monomers having polyvinylidene fluoride (VdF) as a first monomer, and hexafluoropropylene (HFP), chlorotrifluoro ethylene (CTFE), tetrafluoro ethylene (TFE), or combinations thereof as a second monomer”. Thus, the rejection under 35 U.S.C 112 is considered to be moot, in view of the amended claim language.

Claim 49 stands rejected under 35 U.S.C 112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention due to “second polymer” lack of antecedent basis. Applicant respectfully requests reconsideration of the rejection for at least the following reasons.

Claim 49 has been amended to depend from claim 48, which provides proper antecedent basis for the “second polymer”. Thus, it is Applicant’s belief that the rejection under 35 U.S.C 112 is considered to be moot in view of the amendment to claim 49.

Rejections Under 35 U.S.C. 102(b)

Claim 39 stands rejected under 35 U.S.C 102(b) as being anticipated by Yamasaki et al. (US Pat. 4,513,049). Claims 39, 45, and 46 stand rejected under 35 U.S.C 102(b) as being anticipated by Miyazaki et al. (US Pat. 4,931,505). Claims 39, 48, and 49 stand rejected under 35 U.S.C 102(b) as being anticipated by Wensley (US Pat. 2002/0168564A1). Applicant disagrees for at least the reasons set forth below, in which each of these reference is distinguished.

In this regard, first, the spacer 9 (porous substrate) of Yamasaki et al. is interposed between the electret films 7 and 8, but the electret films 7 and 8 are NOT coated along the porous profile of the spacer 9. (See Col. 4, Lines 20-32 and Fig. 3.)

Second, the composition disclosed in Col.1, lines 46-47 of Miyazaki et al. (electret) may be applied to cement or concrete (porous substrate), but the composition are NOT coated along the porous profile of the cement or concrete. (See Col. 6, Lines 32-36.)

Third, the coating 14 (electret) of Wensley covers the microporous membrane 12 (porous substrate), but does NOT fill or be coated on the plurality of micropores 20. (See section 15 and Fig. 1.)

In contrast, amended claim 39 recites:

39. An electret composite, comprising:
a porous substrate; and
an electret coated on the substrate along the porous profile thereof, the electret having a first polymer copolymerizing from monomers having polyvinylidene fluoride (VdF) as a first monomer, and hexafluoropropylene (HFP), chlorotrifluoro ethylene (CTFE), tetrafluoro ethylene (TFE), or combinations thereof as a second monomer.

Significantly, neither Yamasaki et al., Miyazaki et al., nor Wensley teach or suggest the claimed feature of “*an electret coated on the substrate along the porous profile thereof*”. For at least this reason, independent claim 39 patently defines over each of these references.

Accordingly, Applicant respectfully asserts that Yamasaki et al., Miyazaki et al., and Wensley are legally deficient for the purpose of anticipating claim 39, because at least the features/limitations emphasized above are not taught or otherwise disclosed by Yamasaki et al., Miyazaki et al., and Wensley. Therefore, Applicants respectfully assert that the amended claim 39 is in condition for allowance.

Since claims 40-53 are dependent claims that incorporate the features/limitations of claim 39 respectively, Applicant respectfully asserts that these claims also are in condition for allowance.

35 U.S.C. 103(a)

Claims 39-44, 47, 51, and 52 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US Pat. 4,560,737) in view of Chou et al. (US Pat. 2003/0054716). Applicant respectfully traverses the rejections for at least the reasons discussed below.

None of the prior art references (alone or in combination) teaches or suggests the claimed feature of “*an electret coated on the substrate along the porous profile thereof*.”

The Examiner acknowledges that Yamamoto is silent as to teaching of a porous substrate. Thus, by admission of the Office Action, Yamamoto et al. fail to teach or suggest “*an electret coated on the substrate along the porous profile thereof*” of the claimed embodiments. Chou does not teach this feature either.

Instead, Chou et al. disclose a method of preparing an electret includes *treating a polymer substrate with a composition*, evaporating volatile components of the composition from the treated substrate, and then contacting the treated substrate with water in a manner sufficient to impart an electret charge to the substrate. One useful composition for treating the polymer substrate includes a *solvent* capable of swelling the polymer of the substrate and, *optionally, a charge additive*. The charge additive is soluble in the solvent and preferably *remains with the polymer substrate when the solvent is removed*. (See Chou et al. at paragraphs 0032, 0033, and 0037.) Chou et al. further list all possible *charge additives* utilized in their invention, but *fail to* disclose none of the VdF, HFP, CTFE, and TFE acting as the *charge additive* that *remains with the polymer substrate*.

The claimed embodiments expressly limit the electret to having having a first polymer copolymerizing from monomers having *polyvinylidene fluoride (VdF)* as a *first monomer*, and *hexafluoropropylene (HFP)*, *chlorotrifluoro ethylene (CTFE)*, *tetrafluoro ethylene (TFE)*, or *combinations thereof* as a *second monomer*. Thus, Chou et al. *fail to* teach or suggest “*an electret coated on the substrate along the porous profile thereof*” of the claimed embodiments.

As the combination of Yamamoto et al. and Chou et al. fails to teach or suggest *an electret coated on the substrate along the porous profile thereof* (as recited in independent claim 39), claim 39 patently defines over the cited references. Insofar as claims 40-53 depend from claim 39, these claims are also allowable.

As a separate and independent basis traversing the rejections made under 35 U.S.C. § 103, Applicant respectfully traverses the rejections as failing to identify a proper basis for combining the cited references. In combining these references, the Office Action stated only that the combination of Yamamoto and Chou would have been obvious “because Chou provides

necessary details to practice the invention of Yamamoto.” (Office Action, page 5). This alleged motivation is clearly improper in view of well-established Federal Circuit precedent.

It is well-settled law that in order to properly support an obviousness rejection under 35 U.S.C. § 103, there must have been some teaching in the prior art to suggest to one skilled in the art that the claimed invention would have been obvious. W. L. Gore & Associates, Inc. v. Garlock Thomas, Inc., 721 F.2d 1540, 1551 (Fed. Cir. 1983). More significantly,

"The consistent criteria for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this [invention] should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. ..." Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure... In determining whether such a suggestion can fairly be gleaned from the prior art, the full field of the invention must be considered; for the person of ordinary skill in the art is charged with knowledge of the entire body of technological literature, including that which might lead away from the claimed invention."

(*Emphasis added.*) In re Dow Chemical Company, 837 F.2d 469, 473 (Fed. Cir. 1988).

In this regard, Applicant notes that there must not only be a suggestion to combine the functional or operational aspects of the combined references, but that the Federal Circuit also requires the prior art to suggest both the combination of elements and the structure resulting from the combination. Stiftung v. Renishaw PLC, 945 Fed.2d 1173 (Fed. Cir. 1991). Therefore, in order to sustain an obviousness rejection based upon a combination of any two or more prior art references, the prior art must properly suggest the desirability of combining the particular elements to derive a electret, as claimed by the Applicant.

When an obviousness determination is based on multiple prior art references, there must be a showing of some "teaching, suggestion, or reason" to combine the references. Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1383 (Fed. Cir. 1997) (also

noting that the “absence of such a suggestion to combine is dispositive in an obviousness determination”).

Evidence of a suggestion, teaching, or motivation to combine prior art references may flow, inter alia, from the references themselves, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved. See In re Dembiczak, 175 F.3d 994, 1000, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Although a reference need not expressly teach that the disclosure contained therein should be combined with another, the showing of combinability, in whatever form, must nevertheless be “clear and particular.” Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617.

If there was no motivation or suggestion to combine selective teachings from multiple prior art references, one of ordinary skill in the art would not have viewed the present invention as obvious. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); Gambro Lundia AB, 110 F.3d at 1579, 42 USPQ2d at 1383 (“The absence of such a suggestion to combine is dispositive in an obviousness determination.”).

Significantly, where there is no apparent disadvantage present in a particular prior art reference, then generally there can be no motivation to combine the teaching of another reference with the particular prior art reference. Winner Int'l Royalty Corp. v. Wang, No 98-1553 (Fed. Cir. January 27, 2000). The rationales relied on by the Office Action in the present application are merely generic statements, that have nothing to do specifically with the structures disclosed in the other references. As such, these rationales cannot be properly viewed as proper motivations for combining the specific teachings of the individual references. Indeed, the generic motivations advanced by the present Office Action could be used to support a combination of ANY references, which is clearly contra to the cited Federal Circuit precedent and the clear intent of 35 U.S.C. § 103.

For at least the additional reason that the Office Action failed to identify proper motivations or suggestions for combining the various references to properly support the rejections under 35 U.S.C. § 103, those rejections should be withdrawn.

New Claim

Claim 53 has been newly added to emphasize the electret is coated on the inner walls of the pores of the porous substrate. There is no cited prior art disclosing such a limitation achieving such an unexpected result. Therefore, beside its dependency from the independent claim 39, claim 53 should be allowable.

If the Examiner believes a teleconference will expedite the examination of this application, the Examiner is invited to contact the undersigned attorney at 770-933-9500.

No fee is believed to be due in connection with this Amendment and Response to Restriction Requirement. If, however, any fee is deemed to be payable, you are hereby authorized to charge any such fee to deposit account 20-0778.

Respectfully submitted ,

**THOMAS, KAYDEN, HORSTEMEYER
& RISLEY, L.L.P.**

By:



Daniel R. McClure, Reg. No. 38,962

100 Galleria Parkway
Suite 1750
Atlanta, Georgia 30339-5948
(770) 933-9500